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Corrigendum

Corrigendum to "On the property (db) for continuous function spaces" (Topology and its Applications 92 (1999) 101–106) ☆

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A sequence $(B_n)_{n\in\mathbb{N}}$ of absolutely convex subsets of a locally convex vector space E satisfying $E=\bigcup_{n,m\in\mathbb{N}} mB_n$ has property (A1) if each B_{n+1} *is absorbing in* B_n (i.e., for each $x\in B_n$ there exists $m\in\mathbb{N}$ such that $x\in mB_{n+1}$), and (A2) if each B_{n+1} *absorbs* B_n (i.e., there exists $m\in\mathbb{N}$ such that $B_n\subset mB_{n+1}$). Although, if each B_{n+1} absorbs B_n, then each B_{n+1} is absorbing in B_n, the converse does not hold as simple examples show.

A locally convex vector space E has the *property* (db) if for each sequence of absolutely convex subsets B_n with $E=\bigcup_{n,m\in\mathbb{N}} mB_n$ and property (A1) the closure of some B_n is a neighborhood of zero; unfortunately, in my paper "*On the property* (db) *for continuous function spaces*", I have implicitly assumed that property (A1) is equivalent to (A2). I am very much indebted to Professor Aaron Todd for pointing out the error, for many helpful discussions and for showing me an example of a $\tau\alpha$-space and μ-space X such that $C(X)$ is not a db-space showing the incorrectness of Theorem 1.3 in my paper.

In a forthcoming joint paper of A. Todd and me the following characterization will be given for a completely regular Hausdorff space X: the space $C(X)$ endowed with the compact open topology has property (db) if and only if X is a μ-space and a $\tau\beta$-space. Here a topological space X a $\tau\beta$-space if for every sequence of topologically unbounded subsets S_n of X there exists $f\in C(X)$ which is unbounded on infinitely many sets S_n.

Further, the following is the correct version of Theorem 2.4 in my above-mentioned paper: $C_b(X)$ is a db-space iff X'' is $\tau\beta$-space and each bounded subset of X'' is contained in the closure of a bounded subset of X.

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